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MEDICAL NEWS LETTER

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

Facial Burns*

Nicholas G. Georgiade MD, Guido E. Matton MD, and Fred von Kessel MD. Plast Reconstr Surg 29: 648-657, June 1962.

The effects of a burn are basically the same regardless of body area involved. The face and neck areas, because of their social significance, present a more difficult problem in management. While infection should be avoided on the usual covered body surfaces, the risk of invasive infection in burns about the face must be given very careful consideration. Any degree of infection of a facial burn will yield its proportionate percentage of delayed healing, hypertrophic scarring, and unacceptable cosmetic and possible functional impediments.

Many times the degree and depth of a burn are difficult to ascertain until 10 to 12 days postburn. Meanwhile, valuable time has elapsed in the management of a facial burn, particularly if suitable care of the burned area is not instituted immediately. The authors report from experience that once a deep second-degree burn becomes infected the probability of suitable re-epithelization of this area is markedly diminished. Every effort, therefore, should be made to prevent further contamination of the burned areas.

Experimental Work

In reviewing the possibilities of utilizing various substances to minimize or prevent infection of exposed burn surfaces, iodine, one of the most effective antiseptics, or one of the new iodine complexes was considered to be the most likely substance. It was believed advantageous to make one of these polyvinylpyrrolidine (PVP or povidone) complexes of iodine soluble. Investigations with aqueous solutions of this stable organic iodine complex demonstrated that it prolongs the germicidal action of iodine.

In order to evaluate the toxicity of this iodine compound in sustained quantities comparable with clinical situations which might similarly arise, 12 dogs were employed in the experimental laboratories. A 25% body surface granulating area was created on these animals and daily applications of radioactive povidone-iodine solution were made. This treatment was continued for as long as 36 days with daily blood and urine samples assayed for radioactivity. The animals were sacrificed at various intervals, and specimens of the blood vessels, heart, granulating base, skin, liver, lungs, adrenals, kidney, spleen, trachea, and thyroid tissues were obtained. These tissues were evaluated for radioactivity and then sent to pathology for histologic and pathologic evaluation. None of the organs previously mentioned had any significant increase in activity with the exception of thyroid glands as anticipated; pathologic evaluation of the thyroid, as well as the other organs, failed to reveal evidence of toxicity in any specimens nor was any foreign body reaction noted.

* From the Division of Plastic and Maxillofacial Surgery, Duke University School of Medicine, Durham, N. C.

In view of these experimental findings, the use of an aqueous povidone-iodine solution was considered compatible with successful treatment of large burned areas.

Clinical Applications

Several principles should be observed in local care of facial burns and the following routine for various areas has been established by the authors for optimal results in management of facial burns.

Initial Care

Respiratory Tract. The possibility of respiratory tract involvement and laryngeal and pharyngeal edema with inability to maintain an adequate airway should be considered in any facial burns. Irritation to the pharyngeal, tracheal, and bronchial tissues is manifested by labored breathing, hoarseness, dysphagia, and oral erythema with singeing of the vibrissae. Under these circumstances the procedure of choice should be a tracheostomy via a horizontal incision. If necessary, controlled artificial respiration can be added utilizing an apparatus similar to a Mörch respirator. In a recent survey of burns it was found that 22% of all fatal burns succumbed during the first 48 hours. This is undoubtedly related to involvement of the lung parenchyma in severe burns of facial areas with resultant tracheobronchitis and pulmonary edema. If damage to the facial areas appears minimal, the patient can be placed in an oxygen tent with a high humidity and high oxygen concentration at a low temperature in order to minimize tracheal secretions and keep them as fluid as possible. The period of maximum edema occurs during the first 18 to 24 hours, and it is during this period that the patient's respiratory problem should be carefully evaluated and followed.

Facial Area. Initially, the entire facial area of involvement is cleansed gently with a detergent of choice. All foreign bodies and loose epithelium are removed. Blebs or blisters are ruptured and the contained fluid is removed prior to further dressings. Involved hair-bearing areas are closely cropped. The dried exposed burned areas are then sprayed with an aqueous povidone-iodine solution which is bactericidal. This solution has been found experimentally and clinically to be most efficacious in maintaining burned areas as sterile as possible and at the same time allowing a crust to form over the burned area, thereby sealing it.

This resulted in a more even crusting of the burned areas in the deep second- or third-degree range with a marked decrease in the rate of infections. The areas which appeared to be initially third-degree or deep second-degree were able to heal without the necessity of grafting. Third-degree burn areas with obvious demarcation from the surrounding areas were not affected by the use of povidone-iodine aerosol spray, and the eschar over these areas was not altered when it was used. This povidone-iodine solution has been used in the treatment of over 150 burn patients. The use of this antiseptic was most

efficacious when the exposure treatment was used on facial, perineal, or one-surface burn areas.

Eyes. Initial examination of the face should include observation as to the presence or absence of ocular damage. Edema of facial tissues occurs early in the postburn phase and within 12 to 24 hours the eyelids are quite edematous remaining so for at least 72 hours. The authors' usual procedure is to have an ophthalmologist handle this aspect of the burn treatment. In their experience, tarsorrhaphies are indicated where extensive burns have involved the eyelid areas in order to help prevent permanent conjunctival deformity and ectropion from developing. One drop of 3% atropine is used routinely daily to dilate the pupils and to relax and relieve the pain from the ocular region. Antibiotic drops such as 0.5% chloromycetin should also be given every hour. Steroid drops are used, but only with caution and for short periods of time, preferably under supervision of an ophthalmologist.

Oral Cavity. A number of chemical burns of the oral cavity are seen each year. They are usually associated with the ingestion of some chemical agent such as acid, lye, or other caustic material. As soon as possible, the mouth should be irrigated with copious quantities of water followed by one-half strength peroxide. A topical anesthetic ointment, such as Xylocaine 5%, can be applied to the involved areas for the patient's comfort. Fortunately, re-epithelization of the mucosal tissues is rapid and scarring is minimal. Release of these contractures and skin grafting are occasionally necessary.

Ears. The care of the burned auricles is complicated by the presence of cartilage directly underneath the skin. Every effort should be directed to prevent third-degree loss of the auricular skin. If there is a third-degree loss or the cartilage has become infected, debridement of the involved cartilage should be undertaken. Warm saline compresses to the involved areas should be instituted until drainage is controlled. Reconstructive surgery following healing of the auricle is the usual procedure of choice.

Third-Degree Burns

Eventual third-degree burns of the face are managed in the same way until cracking of the eschar occurs. They are then treated effectively with warm saline compresses and daily spraying with povidone-iodine in preparation for skin grafting, and until the eschar is completely removed to a pink granulating base.

Split thickness skin grafting of the granulating burned areas is accomplished as soon as possible, usually within the first 2 weeks. In order to adequately immobilize the graft in this area, numerous "tacking" sutures are placed throughout the graft, but a bolus is not tied over the grafted area because of the tendency of the peripheral sutures to cut through the skin and graft. The preference is a circumferential bulky type dressing applied over the area which will stabilize the grafted region. The initial postgraft dressing is usually performed on the fourth postoperative day and the tacking sutures are removed at that time. Alternate daily dressings are then performed until approximately the tenth day at which time the graft is allowed to remain exposed.

Donor Area. This is allowed to clot immediately after removing the split-thickness skin graft. It is then dressed with a water soluble bacteriostatic ointment impregnated on a sterile gauze dressing. A dry bulky dressing is then applied over this area. On the first postoperative day, all dressings are removed excepting the single gauze layer closest to the donor area. The entire area is allowed to remain exposed to permit a suitable crust to form enmeshed in the gauze.

In the general management of these burns, after removal of skin from the donor areas superficial infection of the donor site is controlled in every instance by use of povidone-iodine spray. The donor areas were sprayed twice daily when found to be superficially infected, and these proceeded to heal uneventfully in all patients.

Once the gauze has become firmly encrusted, the patient can be relieved of the overlying cradle used initially to protect this area. By the twelfth day, (depending on the depth of the split graft taken) the gauze will become gradually detached and can be trimmed along its margins as this occurs until it has completely separated, leaving the usual pink re-epithelized area.

Conclusion

Over the past few years the management of facial burns has been most satisfactorily effected by the exposure method which allows a sterile crust to form and prevents destruction of the injured epithelium. This crust formation is facilitated by utilization of an aqueous povidone-iodine aerosol spray. This antiseptic aerosol allows more contact spraying of the burn areas during the daily routines. Thus, infection in these areas is kept at an absolute minimum allowing normal healing processes to proceed unimpaired. This procedure is now routine in the management of all the authors' facial, neck, and exposed burn surfaces as well as in management of the infected donor area. Areas that become third-degree loss should be resurfaced with thick split thickness skin grafts as early as possible. A tracheostomy is indicated in severe respiratory involvement. Particular areas involved, such as the eyes, oral cavity, and ears, necessitate specialized care.

—Dr. Nicholas G. Georgiade, Duke University Medical Center, Durham, N. C.

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Growing Resistance to Pesticides. One of the most dramatic aspects of WHO's program is the effort to keep ahead in the race between the control or eradication of disease and the growing resistance of disease vectors to pesticides. This involves collaboration with the chemical industry and independent research institutes for the development of new insecticides in the immediate or near future. Some 500 new insecticidal chemicals have already been submitted by manufacturers for evaluation by the collaborating laboratories.

—WHO Chronicle, June 1962

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Recognition and Management of Rupture of the Spleen

M. M. Musselman MD, Omaha, Nebraska
Editorial: Amer J Surg 104: 1-2, July 1962

To reduce deaths from rupture of the spleen, surgeons must be prepared to operate "on suspicion." To wait for classical signs often means waiting too long. The mechanism and manifestations of rupture of the spleen vary so widely that classical symptoms and signs often are obscured or lacking. Treatment by operation should be carried out early and expeditiously.

Most patients with rupture of the spleen have been seriously injured. Many have multiple injuries that obscure the injury to the spleen. However, some have suffered such minor accidents that the physician fails to consider the possibility of a serious intra-abdominal injury. The possibility of this injury should be considered in every patient who has received a blow to the front, back, or side of the trunk on the left. Abrasions over the lower chest or fractures of the lower ribs on the left should arouse suspicion.

Once having suspected rupture of the spleen in a patient, faith can better be placed in "repeated and purposeful examination" of the patient—including peritoneal aspiration—than in laboratory and roentgenographic aids. The writer considers inspection one of the most valuable aspects of examination. First, it may reveal contusions over the lower ribs or upper abdomen on the left. Further, if one sees splinting of the left chest or left upper part of the abdomen with respiration, he has strong additional evidence for a ruptured spleen. Tenderness to palpation and percussion greatest in the left upper part of the abdomen further supports the diagnosis. Frequently, tenderness can be localized more accurately by percussion than by palpation. The writer considers peritoneal aspiration an extension of the physical examination rather than a special examination in these patients and uses it routinely. This simple and innocuous procedure clinches a diagnosis of intraperitoneal bleeding and indicates the need for operation if blood that does clot is obtained from the peritoneal cavity. Occasionally, the author failed to find blood with the needle, but operation must not be delayed if the history and examination suggest the need for it.

Surgeons must be willing to operate "on suspicion." There will be few mistakes and little harm will be done to those patients who have no visceral injury. For example, in a group of twenty-seven patients operated upon "on suspicion," fourteen had a ruptured spleen and eight had bleeding from some other source. In five patients the operation proved unnecessary, but none of these patients died or had a complication from the operation. Since the death rate from ruptured spleen varies from 15 to 35%—according to some reports—and since most deaths result from delay in operation, to operate "on suspicion" seems fully justified.

Excision of a ruptured spleen should be done expeditiously. The immediate aim of operation is to deliver the spleen from the wound so that the pedicle can be reached and hemorrhage controlled. The author prefers a generous left

subcostal incision. He cuts the splenorenal ligament with scissors or tears through it with the fingers, then quickly divides the remaining lateral peritoneal attachments of the spleen superiorly and the splenic flexure of the colon inferiorly. The potential space between the spleen, pancreas, and splenic flexure of the colon anteriorly and the primordial peritoneum posteriorly is developed by blunt dissection. The palm of the hand passes behind the body and tail of the pancreas, and the back of the hand in front of the kidney. This dissection is carried medially as far as the spine. The spleen, pancreas, and splenic flexure of the colon can now be turned forward like the page of a book. The spleen is delivered from the wound and the hemorrhage controlled with a finger around its pedicle. One then can proceed deliberately and carefully to divide the splenic vessels and the vessels to the stomach, avoiding damage to the stomach, pancreas, and colon.

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Splenectomy in Hematologic Disorders *

Gerald L. Sloane MD, Beryl D. Averbook MD, and Melvin R. Kaplan MD, Los Angeles, Calif. Amer J Surg 104: 94-103, July 1962.

Hematologic disturbances which may respond to splenectomy include congenital hemolytic anemia, acquired hemolytic anemia, idiopathic thrombocytopenic purpura, and hypersplenic disorders. The latter constitute an ill defined group characterized by a diminution of one or more of the circulating blood elements due to excessive activity of the spleen. Whether sequestration or humoral inhibition of the marrow constitutes the basic pathogenic mechanism is debatable, but the bulk of available information tends to favor sequestration. The authors have elected not to include in hypersplenic disorders those entities in which a hereditary or immune mechanism is operative.

Experience with splenectomy performed in eighteen patients at Harbor General Hospital, 1946 to 1958, for congenital hemolytic anemia, immunohemolytic anemia, "idiopathic" thrombocytopenic purpura, and hypersplenic disorders leads to the following conclusions:

An asymptomatic cytopenia is not necessarily an indication for any form of therapy.

The level of cells in the blood represents a dynamic equilibrium between production and destruction. Although splenectomy has been advised only when the marrow is normally productive, in some cases removal of the spleen enables a damaged marrow to maintain an equilibrium in the blood sufficient to avoid difficulty from anemia, hemorrhage, or infection. Splenectomy may often be followed by partial, rather than total, correction

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of the peripheral cellular deficit. This decrease in peripheral destruction often shifts the balance enough to induce major clinical improvement.

The risks of treatment with corticotropin or cortisone analogues are appreciable, especially in elderly persons and in those requiring prolonged therapy.

Discretion must be exercised with respect to the use of blood transfusion as primary or long term therapy because of dangers of incompatibility reactions, aggravated hemolytic reactions in autoimmune disorders, serum hepatitis, cardiac decompensation, and hemosiderosis.

Progressive deterioration from anemia, infection, and hemorrhage can occur in the face of treatment with blood transfusions, adrenal steroid therapy, and antibiotics. When excessive splenic sequestration and destruction are present, splenectomy is recommended before such deterioration becomes excessive. Should such deterioration appear in a patient who has previously responded to ACTH or cortisone analogues, or if the anticipated good effect from steroid administration does not materialize within a reasonable period, delay of splenectomy is unwise.

When splenectomy is performed for thrombocytopenia, hemostasis is greatly improved through the infusion of fresh blood containing viable platelets.

It is difficult to attribute improvement in clinical manifestations to any form of therapeutic intervention, including splenectomy, inasmuch as the natural course of some of the diseases considered here is marked by unpredictable fluctuations.

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Misuse of Quinidine in Treatment of Auricular Fibrillation

Samuel A. Weisman MD, Clinical Associate Professor of Medicine, University of Southern California, Los Angeles. Geriatrics 17: 421-422, July 1962.

This report calls attention to the too frequent misuse of quinidine for the treatment of auricular fibrillation. This can be attributed to (1) misinterpretation of the "quinidine test dose," (2) lack of appreciation for each individual's tolerance for the drug, and (3) awareness that a fibrillating heart is not a fully compensated heart.

The quinidine test dose is too often misinterpreted because it is misleading. The fact that a patient experiences no unfavorable reactions following the test dose is no indication that he may safely be given almost any multiple of the initial test dose at frequent intervals without the risk of serious toxic complications. Nevertheless, this is a common procedure. Convulsions, shock-like syndromes, and unexplained sudden deaths accompanying this form of therapy, sometimes many hours after the last dose is given, are not rare occurrences. True, the percentage is not great; but to the patient who suffers

them, it is 100%. All the test dose indicates is that the patient can or cannot tolerate 3 grains of quinidine.

It is well to keep in mind that each individual has his own tolerance for the drug, as with any other therapeutic measure. Some patients' tolerance for the drug may be so low that they show signs of toxicity after the second or third dose following the initial test dose. Others may be given almost unlimited amounts of the drug without showing any unfavorable effects. Then, too, the therapeutic effectiveness of the drug varies with each patient. The author has had cases of auricular fibrillation which were converted to normal sinus rhythm with but two 3 grain doses (a total of 6 grains) of quinidine. Most of his successful cases have been restored to normal rhythm on doses under 20 grains. Dosage should be based on the individual patient's needs and reactions, rather than on any predetermined schedule.

It is well established that a fibrillating heart is not a fully compensated heart but a more or less depressed heart. Quinidine is a myocardial as well as a respiratory depressant. To start the treatment of auricular fibrillation with quinidine means the addition of a myocardial and a respiratory depressing agent to an already embarrassed myocardium and a physiologically impaired respiratory center. This encourages the serious toxic complications, such as cardiac standstill, respiratory paralysis, and so-called unexplained sudden deaths. The heart must first be "conditioned." This is done by the use of digitalis which is a myotonic. The more thoroughly restoration is accomplished, the smaller will be the amount of quinidine needed to restore normal sinus rhythm and the less danger there will be of toxic effects.

The method the writer has used for the past three decades or more for the treatment of auricular fibrillation is based on the principles here presented. He has found it most successful and relatively safe.

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Delayed Neurological Deterioration After Anoxia

Fred Plum MD, Jerome B. Posner MD, and Raymond F. Hain MD, Seattle, Wash. Arch Int Med 110:56-63, July 1962.

It is widely recognized that anoxia produces acute neurologic deficits, but many are unaware that severe neurologic reactions may sometimes be delayed for days or weeks after anoxic exposure. Between the original anoxic coma and the relapse, intellectual and neurologic recovery may seem complete, providing no hint that potentially fatal cerebral reactions have been initiated. The problem is not rare; 10 cases have been seen on the authors' service in recent years. However, the syndrome has been discussed predominantly in the neurologic literature and has attracted little attention in standard medical texts and periodicals. This paper describes 5 patients to illustrate the clinical course of delayed neurologic damage after anoxia. Pathologic studies show the predominant nervous system abnormality in white matter rather than in neurones.

The current cases and those in the literature define a clear clinical picture of delayed postanoxic encephalopathy. Anoxia is usually severe; most patients are in deep coma when found but awaken within 24 hours. Nearly all resume full activity in 4 or 5 days. A clear and seemingly normal interval follows which may last for weeks but usually lasts 2 to 10 days. Then, abruptly, patients become irritable, apathetic, and confused. Some are agitated or manic. Motor control is clumsy, walking changes to a halting shuffle, and diffuse skeletal muscle spasticity or rigidity which occasionally suggests Parkinsonism develops. Neurologic deterioration may either progress to coma and death or may become arrested at any point. Some patients have a second recovery period which leads to full health.

During the initial anoxic insult or the latent period, no clinical signs distinguish patients destined to relapse from those who will have uncomplicated recovery. Occasionally, patients relapse after anoxia only sufficient to daze and not to cause full loss of consciousness. The type of anoxia seems unimportant. The preponderance of carbon monoxide poisoning over other anoxic sources (nitrogen breathing, surgical anesthesia, hypoglycemia, and cardiac arrest) probably reflects carbon monoxide's ubiquity and the ability of this gas to cause prolonged but sublethal anoxia.

The diagnosis of delayed anoxic brain damage is often overlooked, and many patients are originally thought to have psychiatric disease. In one of the authors' cases, the lucid interval led to a referring diagnosis of subdural hematoma. However, during even the first hours of delayed encephalopathy the incipient memory loss, diminished attention span, and mild but definite somatic neurologic abnormalities rule out functional psychosis. Subdural hematoma generally does not produce rapid and diffuse neurologic deterioration in patients who have been entirely well during the days immediately preceding relapse. Also, headache is more prominent in subdural hematoma, a history of trauma is often present or suggested by circumstance, and the spinal fluid commonly shows abnormalities in pressure readings, color, or cellular content. In cases which remain doubtful on purely clinical grounds, electroencephalograms may help since they show diffuse abnormalities in postanoxic encephalopathy while there is localized voltage suppression in many instances of subdural hematoma.

Lacking any clear knowledge of cause makes it difficult to make more than empirical suggestions for treatment. When one case of the present series was encountered several years ago, it was impressive that neurologic deterioration followed abruptly after an exciting celebration. When case reports of other series were reviewed it appeared that delayed reactions invariably arose after patients were ambulated or discharged from the hospital. Indeed, deterioration was often noted immediately after increased activity. Such a sequence was evident in all cases except one included in this review. The natural history, although not explaining the mechanism, suggests that increased general activity after cerebral anoxia enhances potentially myelinolytic factors. This is difficult to prove, but since 1953 all but one patient admitted to the writers' service after severe anoxia have been kept at bed rest for 10 days. The one exception

(not included in this review) was moved from bed to chair on the sixth day and subsequently developed delayed neurologic deterioration.

Once delayed neurologic manifestations have occurred, treatment is limited. Unless patients have pneumonia or other complications interfering with oxygenation, it is doubtful that oxygen therapy is helpful. Sedation with paraldehyde or reserpine has been used to quiet hyperactive patients, since the authors have speculated that even during the late deteriorating stage, excessive physical activity may be deleterious to the brain. Similarly, patients showing progressive neurologic damage have been kept in bed until the neurologic picture clearly stabilized. Beyond this, treatment has been necessarily nonspecific.

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Fractures of the Small Bones of the Hand*

Lot D. Howard Jr, MD, 516 Sutter St., San Francisco, Calif.
Plast Reconstr Surg 29:334-335, April 1962.

There are 19 small bones which make up the internal framework or skeleton of the hand. The radial arrangement of these bones, plus the longitudinal and transverse arching of the group, give to the hand a 3-dimensional configuration useful for grasping which is the principal function. Together, this grouping of bones and joints with their activating tendons forms a mechanical unit of high efficiency. If any of these bones are angulated by reason of fracture, function is impaired and like any mechanical device the efficiency drops far below par.

Movement of the hand comes from two sources: (1) The long muscles located in the forearm send their tendons past the wrist joint to insert at various skeletal points on the small hand bones. (2) The small (or intrinsic) muscles located within the hand itself have tendinous insertions which are independent or associated with those of the long muscles.

Between the forearm and the hand is the wrist joint which can be activated independently of the hand by virtue of the two strong carpal flexors and the three strong carpal extensors—all of which are forearm muscles.

The stance of the hand is the position it assumes at rest and is the position attained by virtue of balance between the long and short muscles. Since the wrist joint intervenes between these two activating units, the position of the wrist determines the tension of the long flexor and long extensor tendons and, thus, influences the stance position. With the wrist in dorsiflexion, the stance of the hand is in a so-called position of function. With the wrist in palmar flexion, the stance represents a position of nonfunction. The difference between these two positions is largely the matter of clearance distance between the tip

* Presented as part of a Special Session on Surgery of the Hand at the meeting of the American Society of Plastic and Reconstructive Surgery, Los Angeles, Calif., October 5, 1960.

of the thumb and the tips of the digits. In both positions, however, the long and short muscles are in balance.

Fracture, with angular deformity of any of the small hand bones, alters the mechanics and, hence, the position of stance or balance of that particular digit. The more proximal the bone, the greater the over-all functional imbalance becomes. Thus, an angulated metacarpal will alter the position of the entire finger, whereas an angulated middle phalanx gives rather minimal deformity. With the hand at rest and in balance there are no undue forces acting to alter the position of a given fracture once it is in line so that a reduced fracture can have the reduction readily maintained by simply immobilizing the part in the proper position. Since the position of the wrist influences the position of the hand, it becomes mandatory that in any fracture in the hand the wrist also must be immobilized.

In general, the best method for reducing a fracture of a small bone of the hand is manual reduction rather than reliance on traction or splints of one type or another to do the job. Once reduced, the simple expedient of immobilizing the part in the position of balance (which depends on wrist position), there will be no reason for the deformity to recur. Immobilization is then continued until healing occurs. All uninvolved parts of the hand can, of course, be free for activity during this period. When possible, immobilization with the wrist in dorsiflexion provides the desirable position of function of the hand during the healing period.

Prolonged traction or compression forces on the small joints of the hand leads to stiffness of these joints. Positioning of the part in other than the position of muscle balance fosters recurrence of the deformity. Lack of complete immobility leads to delayed union or nonunion.

Rigid internal fixation of fractured small bones of the hand by means of Kirschner wires is advantageous in certain cases, particularly in the presence of associated wounds. The placement of pins should be as near in the longitudinal axis of the bone as possible so that the presence of the pin itself will not delay or prevent the settling of the bone ends together. Pin fixation is also indicated in certain types of fractures where the fractured fragment can not be controlled manually. Such fractures generally involve joint surfaces as in Bennett's fracture of the thumb metacarpal.

The three key points, therefore, in treatment of fracture of the small bones of the hands are (1) manual reduction to align the fracture accurately, (2) placing the involved part in the position of muscle balance, and (3) immobilization in this position until healing occurs.

An exact anatomic alignment of a fractured small bone of the hand will do more to preserve normal function than any other factor in treatment.

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MISCELLANY

Surgeons General Unveil Plaque at AFIP

In a special ceremony held at the Armed Forces Institute of Pathology, LtGen Leonard D. Heaton, Surgeon General, U. S. Army, RADM Edward C. Kenney, Surgeon General, U. S. Navy, and MajGen Oliver K. Niess, Surgeon General, U. S. Air Force participated in unveiling a plaque at the main entrance of the Institute on 19 July 1962. The plaque contains the following excerpt from the AFIP building dedication address by President Dwight D. Eisenhower which was delivered on 26 May 1955:

> "And so I dedicate this building to the conquest of disease so that mankind, more safe and secure in body, may more surely advance to a widely shared prosperity and an enduring and just peace."

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Information from the Surgeon General

The Surgeon General, Rear Admiral Edward C. Kenney MC USN, calls attention to the following letter he recently received from William E. Adams MD, Chairman of the Committee on Scientific Program of the American College of Chest Physicians:

"A formal type of program is being considered in the format of the 29th Annual Meeting of the American College of Chest Physicians to be held in Atlantic City, June 13 - 17, 1963. Papers for this portion of the program should be on original laboratory or clinical investigations not previously presented or published. Subject matter will emphasize: (1) transplantation of organs and artificial organs and structures, and (2) chemotherapy in the management of infections of the chest. However, other subjects of interest will be welcome.

Ten minutes will be allowed for each paper on the forum session with a commentary period of 10 to 15 minutes following the first half of the program and again at the end of the session for that half-day period.

A manuscript is to be made available preceding the meeting, and if acceptable, will receive early publication in Diseases of the Chest following the annual meeting. In order that a paper may be acceptable for

this portion of the program, conclusions drawn by the author must be justified by evidence in the manuscript. A limited number (4) of illustrations are permissible.

Other portions of the program will include problems dealing with cardiovascular and pulmonary diseases in general."

NOTE: Medical Officers who wish to participate in this program are requested to submit the title and a short resume of their paper (or proposed paper), the name of the author or authors, and the name of the author who would present the paper—to BuMed (Attn: Code 31). These should be submitted as early as possible in order to receive prompt consideration. At a later date the Bureau should be supplied with a copy of the completed article—and well in advance of the Annual Meeting of the A. C. C. P.

—Medicine Branch, Professional Division, BuMed.

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Acute Gastroenteritis Aboard a Naval Vessel

Reported by LCDR Richard H. Svihus MC USN, Epidemiologist, and CAPT Sidney A. Britten MC USN, Officer in Charge, U. S. Navy Preventive Medicine Unit #7.

An outbreak of 26 cases of acute gastroenteritis occurred among 247 officers and men aboard a U. S. Navy destroyer during the 4-day period, 18-21 March 1962, while the ship was berthed at Naples, Italy. The illnesses were of one to two days duration and consisted of one or more of the symptoms of nausea, vomiting, diarrhea, and abdominal cramps. Many patients also experienced headache and malaise, and one had a slightly elevated temperature.

No consistent associations were found between onsets of illness and meals or other activities afloat or ashore, and no sanitary discrepancies were found aboard ship. Rectal swab cultures from 21 ill persons and 14 food service personnel were negative for pathogenic bacteria.

Half of the cases (13) occurred among the 49 junior enlisted men of one department, all of whom were berthed together apart from the rest of the crew (attack rate of 26. 5%). Of the remaining 13 cases, one was in an officer and 12 were randomly distributed among the 158 junior men of the other departments of the ship (attack rate of 7. 6%). The cases in the one department appeared approximately one day before the others.

Of particular interest is the fact that 2 of the 5 epidemic investigators subsequently developed the illness. They were the only 2 of the investigating team to enter the berthing spaces. One developed symptoms 12 hours and the other 19 hours after going aboard the ship. It was concluded that the outbreak was probably viral in etiology with a short incubation period and with person-to-person spread. —Morbidity and Mortality Report PHS DHEW, July 6, 1962.

Annual Far East Sessions - American College of Physicians

August 1961 saw the inauguration of a new type of medical meeting in the Far East with the successful staging of the First Annual Session of the American College of Physicians in the Far East at the U. S. Naval Hospital, Yokosuka, Japan. The hospital's Commanding Officer, CAPT William N. New MC USN (recently selected for promotion to the rank of Rear Admiral in the Medical Corps) is the General Chairman of the Far East Region of the ACP, and was responsible for planning and setting up the first annual meeting at Yokosuka. He reports as follows:

"Plans for the second Annual Session came to fruition with the even more successful and professionally rewarding meeting at the U. S. Air Force Hospital, Tachikawa, Japan, 10 to 12 May 1962. Attendance which exceeded expectation, together with an enthusiastic response, stimulated the Committee to consider plans for a Third Session next year. The College has recognized the Far East Region.

Many of the members of the Committee will have completed their tour of duty in the Far East prior to the next meeting. However, it is their desire, as well as that of the President of the American College of Physicians, that these meetings continue. Several Committee meetings have already taken place and it has been decided that the Third Far East Session will be held 9 through 11 May 1963 at the U. S. Army Medical Command, Camp Zama, Japan, through the courtesy of COL Everett King MC USA, Commanding Officer of that activity. The facilities of the hospital and the 406th General Laboratory are well adapted to the requirements for this meeting. CAPT G. M. Davis Jr, MC USN, F. A. C. P., who will assume command of the U. S. Naval Hospital and who will be the Senior Fellow of the College in Japan, will serve as General Chairman of the Session.

The general format of the meeting is expected to be similar to that of the recent meeting. However, it is desired that certain emphasis be placed upon diseases of the blood, lymphatics, and reticuloendothelial system, but not to the exclusion of worthwhile presentations in other areas of internal medicine, pediatrics, dermatology, psychiatry, neurology, radiology, and pathology. The Committee encourages all interested physicians to give early thought to the presentation of a paper at this meeting. Please consider this letter as a first call for material for next year's meeting. Those having a paper to present should forward the title and a brief abstract to the Program Committee, American College of Physicians, USNH Yokosuka.

These meetings serve a number of functions. Primarily, though, they are intended to stimulate interest and to provide a professional program for those members and prospective members of the American College of Physicians in the Far East who would otherwise be unable to attend a meeting of the College. They have also been a valuable means of providing professional and desirable liaison contact with many prominent physicians throughout Japan.

A successful meeting next year will require the continued support of all those remaining in the Far East who cooperated so well during the past two years. It will require the dissemination of this information to all interested physicians who have arrived since the last meeting, or who will arrive between now and next May."

* * * * * *

Federal Hospital Luncheon - An Announcement

The Federal Hospital Luncheon, sponsored this year by the Department of the Navy, will be held on Tuesday, 18 September 1962, at the McCormick Place, East Twenty-Third Street and Lake Front in Chicago, Ill., during the Annual Convention of the American Hospital Association. Mr. Roger Hilsman, Assistant Secretary of State for Intelligence and Research, will be the guest speaker.

Mr. Hilsman is from Waco, Texas and is a graduate of West Point, Class of 1943. He holds M.A. and Ph.D degrees in International Relations from Yale University. During World War II he served with Merrill's Marauders in Burma where he was wounded. Later he served with OSS, commanding a guerrilla unit operating behind the Japanese lines. Mr. Hilsman was on the OSS mission to Mukden, Manchuria, to liberate the American POW's and was the first American to reach his father who had been Commanding Officer of Negros Island in the Philippines. At the time of the Korean War he served in NATO planning in London and Germany.

Mr. Hilsman's career includes teaching and research at the Center of International Studies of Princeton University and at the School of Advanced International Studies of Johns Hopkins University where he is also a member of the Washington Center of Foreign Policy Research. He has written a number of articles on various aspects of foreign affairs and national defense and is the author or coauthor of the following books: "Strategic Intelligence and National Decision," "Military Policy and National Security," "Alliance Policy in the Cold War," and "NATO and American Security."

The price of tickets for the luncheon is $4.50 per person and they may be obtained locally from the Office of the District or River Command Medical Officers or from CDR R. C. Will MSC USN, Code 4113, Ext. 61185, Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C. Checks or money orders should be made payable to the American Hospital Association. It is requested that tickets be purchased prior to 12 September 1962.

Hospital Administration Course for MSC Officers. BuMed Instruction 1520.12A contains information concerning the course of instruction in Hospital Administration available to Medical Service Corps Officers at the Naval School of Hospital Administration, NNMC, Bethesda, Md. Officers with 2300 designators need not request this course as their attendance will be scheduled by the Bureau. Officers with 2302 or 2305 designators who desire this course must submit individual letter requests to the Bureau via their commanding officer. To be considered for the class convening in August 1963, requests must reach the Bureau prior to 1 February 1963. —Director, Medical Service Corps Division, BuMed.

From the Note Book

Maryland - D. C. - Delaware Hospital Association Conference. The Annual Conference of the Association will be held at the Shoreham Hotel, Washington, D. C., October 15 - 17, 1962. Medical Department officers are invited to attend the Federal Hospitals Executives Luncheon in the Palladian Room of the hotel at 12:15 p. m., Wednesday, October 17, 1962. RADM Edward C. Kenney MC USN Surgeon General, U. S. Navy, is scheduled as the speaker. His subject will be "Medical Aspects of the Polaris Submarine Program." Tickets for the luncheon are $4. 25 each and may be obtained from CAPT John E. Gorman MC USN, Bureau of Medicine and Surgery (Code 31, Rm. 2226) Navy Department, Washington 25, D. C. Checks or money orders should be made payable to CAPT John E. Gorman MC USN.

It is considered that this year's proceedings and exhibits will be among the best ever presented. —Professional Division, BuMed.

The Names of Polaris Submarines. The Navy has recently announced the names of three new FBM submarines. They will be named for American Generals, one of whom became President of the United States. The three submarines—ULYSSES S. GRANT, STONEWALL JACKSON, and NATHANAEL GREENE—are of the 425-foot, 7000 ton LAFAYETTE class. This leaves only three of the present, building, or authorized SSBN's (632, 633, and 635) unnamed.

The nine submarines which follow are all in commission: USS GEORGE WASHINGTON (SSBN 598), USS PATRICK HENRY (SSBN 599), USS THEODORE ROOSEVELT (SSBN 600), USS ROBERT E. LEE (SSBN 601), USS ABRAHAM LINCOLN (SSBN 602), USS ETHAN ALLEN (SSBN 608), USS SAM HOUSTON (SSBN 609), USS THOMAS A. EDISON (SSBN 610), and USS JOHN MARSHALL (SSBN 611).

LAFAYETTE (SSBN 616), ALEXANDER HAMILTON (SSBN 617) and THOMAS JEFFERSON (SSBN 618) have been launched but not commissioned.

Besides the three still unnamed, the following 15 are under construction:

ANDREW JACKSON (SSBN 619)
JOHN ADAMS (SSBN 620)
JAMES MONROE (SSBN 622)
NATHAN HALE (SSBN 623)
WOODROW WILSON (SSBN 624)
HENRY CLAY (SSBN 625)
DANIEL WEBSTER (SSBN 626
JAMES MADISON (SSBN 627)
TECUMSEH (SSBN 628)
DANIEL BOONE (SSBN 629)
JOHN C. CALHOUN (SSBN 630)
ULYSSES S. GRANT (SSBN 631)
STONEWALL JACKSON (SSBN 634)
NATHANAEL GREENE (SSBN 636)

—From NAVNEWS, 1 July 1962

NOTE: Each Intercontinental Ballistic Missile (IBM) or Polaris submarine has two complete and separate crews—a Gold Crew and a Blue Crew—which alternate in operating the vessel on extended cruises. Thus, the Bureau of Medicine and Surgery must assign two specially trained and qualified Medical Officers to each Polaris submarine, one for each of the two crews, for full operational readiness. —CAPT G. J. Duffner MC USN, Director; Submarine Medicine Division, BuMed.

Public Health Service Announcement. Surgeons, nurses, and technicians are now being recruited by the U. S. Public Health Service for surgical teams to provide emergency medical care to the civilian population of South Vietnam. Dr. Luther L. Terry, PHS Surgeon General, said he will welcome inquiries from all qualified persons and stated:

"I believe this is one of the most important international health projects in which we are engaged today. It might well be a significant factor in the relations between the United States and the people of the Far East."

The staff of each team will include a chief surgeon, deputy chief surgeon, physician or nurse anesthetist, operating room nurse, surgical nurse supervisor, and medical or X-ray technician. They will serve in provincial hospitals where limited surgical facilities are now being completed. Generally, assignments will be for 2 years. The salaries will correspond to the current scale for foreign duty, with allowances for quarters and dependents. Wives may accompany team members to provincial posts, but wives with children will be required to live in the capital city, Saigon.

This project has been undertaken by the Public Health Service, Department of Health, Education, and Welfare at the request of the White House, as part of the health program for South Vietnam being conducted by the Agency for International Development.

Medical Aspects of Advanced Warfare

This course is designed to familiarize key Medical Department officers with the general characteristics of, and the problems associated with, air warfare systems with particular emphasis placed on nuclear weapons, missile delivery systems, and medical problems related thereto.

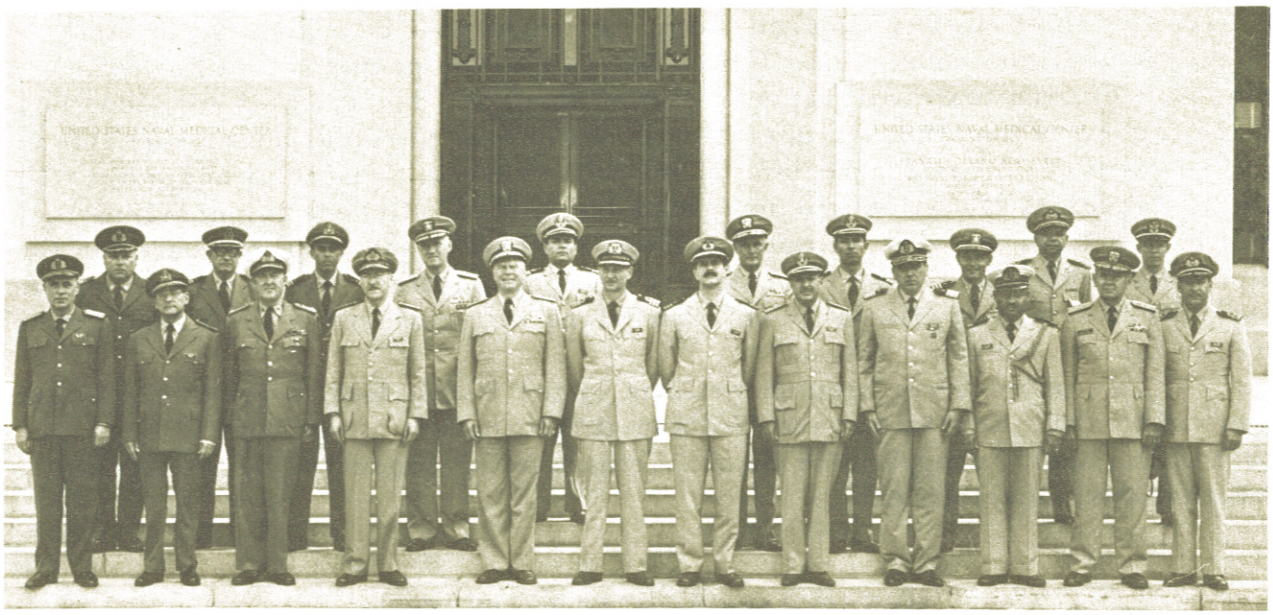
Class	Inclusive Dates	Deadline Date to Apply
62-B	19-23 November 1962	1 October 1962
63-A	20-24 May 1963	1 April 1963

The above scheduled courses will be conducted by the U. S. Air Force at the Medical Service School, USAF, Gunter Air Force Base, Ala.

SECRET security clearance is required on all candidates approved for attendance, and selections will be made on a "need-to-know" priority basis.

Requests should be forwarded in accordance with BUMED INSTRUCTION 1520.8 and comply with the deadline dates as indicated above. All requests must indicate that a security clearance of SECRET has been granted to the officer requesting attendance, and an explanation in regard to his "need-to-know."—Training Branch, Professional Division, BuMed.

FIRST CONFERENCE OF THE SURGEONS GENERAL OF THE NAVIES OF THE AMERICAS
NATIONAL NAVAL MEDICAL CENTER, BETHESDA, MARYLAND
20 - 23 AUGUST 1962



First Row, left to right:

Rear Admiral Ciriaco F. Cuenca, MC, Argentine Navy, Surgeon General; Vice Admiral (MC) Waldyr Caldas Pires, Brazilian Navy, Director, Brazilian Naval Medical Corps; Surgeon Rear Admiral T. B. McLean, Surgeon General, Canadian Forces; Rear Admiral Luis Noziglia B., MC, Chilean Navy, Surgeon General; Rear Admiral John Quinn, U.S. Navy, Director, Pan American Affairs, Office of the Chief of Naval Operations; Commander Miguel Angel A., Colombian Navy, Surgeon General; Lieutenant Commander Gustavo Arosemena M., Ecuadorian Navy, Surgeon General; Rear Admiral Rafael Vargas Salazar, MC, Navy of Mexico, Surgeon General; Captain Aristides Munoz, MC, Paraguayan Navy, Director of Health Services; Lieutenant Ruben da Silva, MC, Paraguayan Navy; Rear Admiral Edward C. Kenney, MC, U.S. Navy, Surgeon General; Lieutenant Commander Tito Monroy P., Venezuelan Navy, Chief, Department of Health of the Navy

Second Row, left to right:

Captain Leonardo J. Maloberti, MC, Argentine Navy; Captain Hermano Soares de Souza, MC, Brazilian Navy; Lieutenant Commander Walter Soares da Cunha, MC, Brazilian Navy; Rear Admiral Cecil L. Andrews, MC, U.S. Navy, Assistant Chief, Bureau of Medicine & Surgery for Personnel & Professional Operations; Lieutenant Commander Mario Cinta S., Navy of Mexico; Rear Admiral Robert B. Brown, MC, U.S. Navy, Commanding Officer, National Naval Medical Center; Lieutenant Commander Jorge Lopez B., Navy of Mexico; Commander Edward W. Bird, MC, U.S. Navy, Head, Audiovisual Training Section, Bureau of Medicine & Surgery; Lieutenant Commander Luis Landaeta S., Venezuelan Navy; Lieutenant Commander Carlos Villafana, MC, U.S. Navy, U.S. Naval Propellant Plant, Indian Head, Maryland.

A conference of Surgeons General of ten Navies of the Americas convened at the National Naval Medical Center, Bethesda, Md., at 0930 on 20 August. The final session closed at 1200, 22 August 1962. The conference first of its kind, developed guidelines for the future exchange of technical information and advisory assistance among the navies represented. Mutual problems and interests in diversified fields of naval medicine were also discussed. Prominent in the proceedings were presentations on clinical patient care, medical training, preventive medicine, and space medicine. Senior delegates attending the conference and their Staff associates are identified in the photograph on the preceding page.

At the opening ceremony the group was welcomed by Rear Admiral Robert B. Brown, MC, U. S. Navy, Commanding Officer of the National Naval Medical Center, who made opening remarks. Then, Rear Admiral John Quinn, U. S. Navy, Director of Pan American Affairs, Office of Chief of Naval Operations, made an extension of remarks, followed by Doctor Frank B. Berry, Deputy Assistant Secretary of Defense for Health and Medical affairs. Rear Admiral Edward C. Kenney, MC, Surgeon General, U. S. Navy, presided over the opening session, delineated the purposes of the meeting, described the proposed agenda, and designated Lieutenant Commander Carlos Villafana, MC, U. S. Navy, as his Staff member to serve as presiding Chairman of the program to follow.

Each senior conferee or one of his staff members then presented a five minute review of the Medical Department of his Navy. These talks were highly interesting, illuminating, and helpful in gaining an early comprehension of the organization and operational features of each Navy.

During the first day and a half of the program, Conference guest speakers made the following presentations:

Organization of and Provision for Dental Services	RADM C. W. Schantz, DC, USN
Medical Officer Procurement	CAPT R. L. Christy, MC, USN
Medical Department Organization	CAPT H. S. Etter, MC, USN
Heat Stress in Military Training	CAPT D. Minard, MC, USN
Inter-Navy Standardization of Medical Supplies	CAPT J. S. Cowan, MC, USN
Preservation of Whole Blood	CAPT L. L. Haynes, MC, USN
Training Resources	CAPT S. D. Bond, MC, USN
Aviation and Space Medicine	CAPT Frank B. Voris, MC, USN
Research and Medicine	RADM L. D. Coates Jr, USN Chief of Naval Research
Current Problems in Naval Preventive Medicine	CDR J. W. Millar, MC, USN
Audiovisual Aids to Communication	CDR E. W. Bird, MC, USN

CAPT G. W. Russell, MC, USN and CDR E. W. Bird, MC, USN served as the Conference Administrative Staff.

CAPT G. G. Ball, USN, CDR A. A. Schirmer, SC, USN and Miss Barbara A. Baer assisted as representatives of the Director of Pan American Affairs, Office of the Chief of Naval Operations.

On the afternoon of 21 August the delegates and their staffs were conducted on a tour of the Naval Medical Research Institute, NNMC, by the Commanding Officer of that activity, CAPT John R. Seal, MC, USN. Later in the day they were met by Doctor Frank B. Rogers, Director of the National Library of Medicine, who escorted them through the beautiful new library building. At the Armed Forces Institute of Pathology (AFIP), COL Joe M. Blumberg, MC, U. S. Army, Deputy Director of AFIP, guided the group throughout the facility.

On Tuesday evening, 21 August, all visiting Surgeons General and their Staffs were honored at a reception sponsored by Admiral Kenney at the Officers' Club, National Naval Medical Center. Among the guests were Ambassadors from the countries represented and many prominent civilian, governmental, and military leaders.

Final summary discussions at the NNMC were held on 22 August. These involved clinical areas, training resources, and lines of communication for medical information. Mexico was selected to be the country for the next Conference.

On Wednesday afternoon they toured the facilities of the Armed Forces Radiobiology Research Institute at the NNMC, and were greeted by COL James T. Brennan, MC, USA, Director, AFRRI.

On 23 August the visiting Surgeons General departed for Chicago where they toured Chicago Health Department facilities as guests of the Chicago Commissioner of Health, Samuel L. Andelman. They were also escorted through the Michael Reese Hospital and Medical Center in Chicago, and visited the U. S. Navy Recruit Training Command and the splendid new U. S. Naval Hospital at Great Lakes, Ill. Rear Admiral Frank P. Kreuz, MC, U. S. Navy, Commanding Officer of the hospital, held a reception and buffet at the CO's Quarters in honor of these distinguished guests.

On Sunday, 26 August, most of the group departed from Chicago for New Orleans, La., to return to their homelands, expressing great satisfaction concerning this first assembly and enthusiasm for future meetings.

—From a Report by LT Robert S. Ruffin, MSC, USN,
Public Information Officer, NNMC, Bethesda, Md.

NOTE: Appreciation is hereby expressed for the assistance of LT Ruffin in the preparation of this report—and for the contribution of Mrs. Marjorie Bowker of the U. S. Naval Medical School for compiling the names, ranks, and titles of the officers shown in the group photograph. The picture on page 20 is an official photograph, U. S. Navy—Medical Photography Dept., U. S. Naval Medical School, NNMC, Bethesda, Md.

—Editor

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DENTAL SECTION

New Dental Caries Test

Science News Letter 81:372, June 16, 1962.

A simple new 15-minute test that shows whether or not a patient's teeth are likely to develop cavities has been reported by Dr. G. W. Rapp, head of the department of biochemistry and physiology at Loyola University, Chicago. A dentist can make the test in his office.

The test, which shows color reaction to a single enzyme, reductase, was tried on 250 school children for 12 months.

The children chewed paraffin wax to stimulate the flow of saliva and to remove debris from the mouth. A saliva sample was then taken and mixed with a definite quantity of a reagent called diazoresorcinol which initially has a blue color.

As the reductase enzyme acts upon the reagent in an atmosphere of restricted oxygen content, Dr. Rapp said, the color is changed from blue to red. If the enzyme activity is very high, the red color is converted to a colorless form in 15 minutes.

Another phase of the test, which included toothbrushing (no special kind of tooth paste), showed results that Dr. Rapp said would convince even the skeptic that brushing the teeth does some good.

But no one yet has proved that brushing the teeth can prevent tooth decay, and Dr. Rapp explained that it is not yet possible to state accurately which microbes are primarily responsible for destroying tooth substances.

Certain products of the biological activities of the microbes rather than the organisms themselves seem to be responsible.

It is for this reason that a study of certain enzymes rather than of the cells has produced a workable, rapid and useful test that gives the dentist a diagnostic tool, Dr. Rapp said. The test is especially useful for children because their caries-susceptible teeth have not all been altered by dental treatment. Dr. Rapp's findings appear in the Illinois Dental Journal, 31:290, 1962.

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Historical Note—Force dental companies were activated 15 June 1956 by the Commandant of the Marine Corps. This new organizational structure provided the Fleet Marine Force with a flexible, highly mobile dental service, capable of meeting the treatment requirements of the varied types of Marine Corps operations.

Incidence of Oral Malignancies*

Tadashi Ueno, Masatsugu Shimizu, and Shigetoshi Shiota, Department of Oral Surgery, Tokyo Medical and Dental University. J Dent Res 41(3):508, May-June 1962.

The purpose of this paper was to study and classify the different types of malignant tumors that occur in the oral regions. The sex, age distribution, and location of these lesions are reported. The materials for study consisted of 607 patients with oral malignant tumor who had called on our clinic in the 30-year period 1930-60. Of the 607 cases, 539 were epithelial malignant tumors. Compared with these, the benign tumors, which occurred at the same period, were 395 in number, including 144 cases of ameloblastoma. In addition to these, as related diseases, there were 19 cases of leukoplakia and 171 cases of epulis. The oral malignant tumors were more prevalent in males than in females. The sex ratio was 1.6:1, and almost the same ratio was seen in the patients having ameloblastomas. Between the fourth and sixth decades, 74% of all oral malignant tumor patients were observed. Exactly 50.5% (307 cases) of these tumors occurred on the maxilla, 147 cases (24.2%) on the mandible, and 154 cases on the other sites, such as the tongue, buccal mucosa, mouth floor, etc.

*From observation on 607 cases of oral malignant tumors treated in the Department of Oral Surgery, Tokyo Medical and Dental University Hospital during the last 30 years.

* * * * * *

Personnel and Professional Notes

Postgraduate and Resident Dental Officer Graduation. Graduation exercises were held on 29 June in the Main Auditorium of the National Naval Medical Center, Bethesda, Maryland, for 28 Dental officers of the General Postgraduate course and 5 officers who had completed residencies in Oral Surgery, Prosthodontics, Periodontics, or Oral Pathology.

The ceremonies were presided over by Capt A. R. Frechette, DC, USN, Commanding Officer of the U. S. Naval Dental School.

The Commanding Officer's award for excellence in Operative Dentistry was presented to LCdr F. R. Ruliffson, DC, USN.

The main address was delivered by Mr. Louis Banks, Assistant Managing Editor of Fortune Magazine. In his talk entitled "The Call of Double Duty" he emphasized the importance of each and every naval officer diligently striving to improve his everyday performance in his chosen field because of the impact it may have on his associates and on those with whom he may come in contact. To emphasize his point Mr. Banks referred to three symbolistic acquaintances he made while serving on active naval duty - a Squadron Commander, a Supply Corps Officer, and a Dental Corps Officer. Concerning the

Dental officer Mr. Banks stated, "He managed to convey in his professionalism a dedication to excellence for its own sake. As I came to know him well, I found it difficult to explain the magical effect that this intangible quality had on corpsmen, his patients, and his friends. It was as though they came through the door expecting, at best, the perfunctory—and then discovered unmistakable excellence. In discovering excellence where they least expected it they came to sense that the whole outfit must be very good all the way through. Another quiet victory for the Naval service—and human spirit. Again, there is nothing unique about this quality in Naval tradition. Yet, it is an important memory to carry out into the world where it is intellectually fashionable to hold that America is hopelessly materialistic and that the only motivating force is the fast buck."

Following the graduation a reception was held for the graduates and their guests.

Navy Dental Officers Host Rhode Island Dental Society Meeting. Navy Dental Officers in the U. S. Naval Air Station, Quonset Point, Rhode Island area hosted a recent meeting of the Rhode Island State Dental Society. The meeting was held in conjunction with the 50th Anniversary of the U. S. Naval Dental Corps. Rear Admiral C. W. Schantz, DC, USN, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) and Chief, Dental Division was the guest speaker. Capt R. C. Harwood, DC, USN, Dental Officer, Construction Battalion Center, Davisville, Rhode Island, was the program chairman and arranged to have the following Dental officers appear during the scientific portion of the meeting:

Capt Don L. Maxfield, DC, USN	"The Maxillary Immediate Denture"
Cdr Edward J. Copping, DC, USN	"The Philosophical Approach to Successful Endodontic Treatment"
LCdr A. A. Capozzoli, DC, USN	"Indications and Contraindications to the Use of Antibiotics in Dentistry"
LCdr Roger Flagg, DC, USN	"Periodontics in General Practice"

Capt W. C. Wohlfarch, Jr., DC, USN is the Dental Officer of the host activity, Naval Air Station, Quonset Point.

Documentation of Dental Corps Anniversary. Realizing that many Dental officer and technician groups plan to commemorate the 50th Anniversary of the Dental Corps it is requested that the Dental Division, Code 611, be provided with copies of any news release, photos, or other material concerning this occasion.

These items will become part of the official record concerning the Anniversary.

Dental Section of BuMed Library. The following dental professional periodicals are needed by the Dental Division (Code 611) to complete the Dental Section of the Surgeon General's Library. The Journal of Prosthetic Dentistry: Vol 1, 1951 - All issues; Vol 2, 1952 - All issues; Vol 11, 1961 - No 1, Jan - Feb

The Journal of Oral Surgery, Anesthesia and Hospital Dental Service: Vol 18, No 4 Jan - Feb 1961

Activities having such periodicals which are in excess or not needed are requested to send them to this Bureau.

Washington Area Dental Technicians to Commemorate Dental Corps Anniversary. On 17 August 1962 about 150 Washington, D. C. area Dental Technicians held a semi-formal dinner-dance at the NCO Club, Andrews Air Force Base to commemorate the 50th Anniversary of the U. S. Naval Dental Corps.

Rear Admiral C. W. Schantz, DC, USN, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) and Chief, Dental Division was the guest of honor.

U. S. Navy Dental Corps Continuing Training Program. The need for a continuing education program to keep Dental officers of the Navy abreast of the latest developments in dentistry and keyed to a high professional level, the U. S. Naval Dental Corps is offering a series of short postgraduate courses conducted by members of the staff of the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland. Among the courses to be offered is "Endodontics."

This course consists of lectures, seminars, and demonstrations of endodontic procedures that may be undertaken at any dental activity. Included are discussions of the etiology, diagnosis, and treatment of diseases of the dental pulp, conservative and surgical management of periapical lesions, and management of situations related to other fields of clinical dentistry. The instructor will be Captain J. F. Bucher, DC, USN. The course will be offered 8-12 October 1962. Quotas have been assigned to ComOne, ComFive, ComSix, ComNine, and CNATRA.

These short courses are open to active duty career Dental officers of the Armed Forces in accordance with quotas established by the Bureau of Medicine and Surgery.

Applications should be received in the Bureau as early as possible and preferably, not less than 4 weeks prior to commencement of the course. The Bureau Professional Advisory Board will make recommendations on all requests, and upon approval by the Surgeon General, applicants will be notified regarding the final action. Those approved will be nominated for TAD or authorization orders, as appropriate. Accounting data will be forwarded to individual officers nominated for TAD orders. Staff Dental Officers not utilizing assigned quotas should report this information to BUMED, Code 6111, prior to the convening date of course. This will allow the Bureau to fill the quota from other districts.

Dental Procedures. During the Reporting Period ending June 1962, an analysis of the Dental Service Reports reveals the following: Total Procedures 1,995,659 which includes 887,865 operative, 22,956 prosthodontic, 83,363 oral surgical, and 191,141 periodontic procedures. All other procedures totaled 810,324.

OCCUPATIONAL MEDICINE

Practical Experience With Routine Use of Field Indicators

N. H. Ketcham, M. S., Development Department, Technical Center, Union Carbide Chemicals Company, South Charleston, West Virginia. Amer Industr Hyg Assn J 23(2):127, March-April, 1962.

Because field-type indicator tests are simple to use and readily available there is a risk that they may be applied improperly by inexperienced persons. Information needed for the appropriate application of the tests to specific problems is discussed. Used correctly, this type of test is valuable for many applications including pre-entry vessel-testing, routine monitoring of inhalation exposure in work areas, emergency air sampling, personnel monitoring (indicator crayons), quality control testing, trouble shooting, leak testing, and technical development.

A rapidly increasing number of field-type indicator tests have been made available within the last few years. In many instances these devices fill a well-defined need, often doing a needed job quickly, easily, and cheaply. On the other hand, because of the simplicity and ready availability of equipment of this type, it can get into the hands of inexperienced people and be misused. Improper use can actually create an undesirable situation or increase a hazard. This is the problem we need to consider.

This discussion reflects the experiences of 6 major plants producing synthetic organic chemicals and several large development, research, and engineering departments of the Union Carbide Chemicals Company. This Company markets approximately 400 different chemicals and resins. However, if we include raw materials, intermediates and by-products, and the research and development items being worked on at any given time, our industrial hygiene program is concerned with literally thousands of materials. These include mainly organic materials, but also include a large number of inorganics. Accordingly, our Company has a potential use for essentially all of the field-type indicator tests which have been marketed to date. Actually, we are only using a small portion of those available. At the latest count, we have used 18 different tests of this nature. Of these, we have found it desirable to subject 10 to critical testing in our laboratories. Most of these tests are run in our Development Department Laboratory, which provides a company-wide methods

development service, but limited testing is also done in the plant laboratories. The results of any work of this nature are distributed to the other potential users.

The extremely wide potential uses of these tests, as well as the fairly wide existing uses, create a serious problem. This problem stems from the fact that the tests can be misused. It is certainly true that any analytical technique can potentially be misused. However, complex instrumentation or analytical procedures usually require that experienced and qualified personnel do the work. The field-type techniques appear to be so simple that almost everyone feels qualified to run the analyses and to interpret the results.

It is usually undesirable and sometimes impossible to limit the use of field-type indicator tests to people who fully understand the technique, its correct application, its limitations, and the proper interpretation of the results. According to a quick count made recently, there are at least 190 different tests of this kind now on the market. The Department of Health, Education and Welfare type of air pollution field-test apparatus was not included in the count, although it possibly should be.

In addition to the variety of tests available, the diversity of the manner in which they are used also contributes to the problem. In our Company, tests of the kind being discussed are used in a number of different ways.

Field-type indicator tests lend themselves readily to the testing of atmospheres inside vessels, pipes, manholes, or other enclosures prior to having men enter. Probably the most common test would be for carbon monoxide. However, our experience and the experience of others points up a serious problem. The routine checking of a vessel for carbon monoxide, even though it might logically be suspected of containing some carbon monoxide, may not tell the whole story. For example, there is the possibility of an oxygen deficiency, which will not show on a carbon monoxide test. In the hands of a person inexperienced in the safety and industrial hygiene field, a negative test for carbon monoxide in a vessel can be more dangerous than no test at all. As part of a complete safety procedure it is, of course, very useful.

The testing of the atmosphere inside a vessel for phosgene can also easily lead to an incorrect conclusion. In the presence of very high concentrations of phosgene, chlorine, or some other strong oxidizing agents, the detector tube color is formed but then immediately bleached. Thus, a "negative" test could mean either no phosgene or a high concentration.

This type of sampling is the traditional industrial hygiene air sampling survey. Frequently this work can be done with field-type tests. An example of a desirable application would be the periodic measurement of benzene in a working environment. However, benzene is usually accompanied by one or more homologs or related molecules which may interfere in the test being used. For example, one of our plant laboratories subjected one kind of benzene detector tube to qualitative interference tests of materials likely to be present with the benzene. They found that of 15 possible interferences, 8 gave a response which could be misunderstood for benzene. The benzene detector tubes of some manufacturers have a protective absorbing layer designed to improve

the specificity. According to our tests they are much more specific and we have recommended that our plants use them in preference to the non-specific types.

Field-type indicator tests are particularly suited to emergency type air sampling following an unusual incident or an abnormal operating condition. Typical of an application of this type is the use of phosgene detector tubes in the vicinity of operations involved in the production or use of large amounts of phosgene. It has been our experience that the commercially-available tubes for phosgene detection are eminently satisfactory from the point of view of the industrial hygienist. They do detect phosgene in a range of about one-half ppm, which includes the Threshold Limit Value of 1 ppm. However, a serious psychological problem was encountered. Many people can smell phosgene at concentrations lower than detected by the tubes, and as a result some of these people were quick to question the reliability of the test. Another interesting problem was experienced when some people observed the color developed in the tube bleached out again after several hours and the tube could then be re-used. This was confirmed in the laboratory, but a very limited number of re-uses (probably only one) can be expected. Accordingly, we took the position that the tubes were not suitable for reuse, as we knew we could not control the number of times they would be reused if we condoned this practice at all.

Indicator crayons are available for a limited number of possible contaminants, including phosgene. Crayon marks are made on tags which can be worn by personnel, hung up in a visible location, or placed on equipment. A change in color indicates the presence of phosgene. This test has also been successful from an industrial hygiene point of view. It is extremely sensitive and can be made semi-quantitative. Again, we ran into a serious psychological problem; this time because the test is so sensitive it responds to amounts of phosgene which are insignificant from a health point of view. When an operator observes a color change, his first inclination is to promptly leave that location. It has taken considerable effort to educate the men in the proper use of this test. A color table was prepared by our Development Department showing the time required for a fresh crayon mark to reach a given color in the presence of known concentrations of phosgene in air. The use of the phosgene indicator tube, which from a psychological point of view is not quite sensitive enough, combined with the detector crayons, which by themselves would be too sensitive, makes a fairly good combination.

One of our laboratories has tested an indicator tube for determining the presence of phosphine as a contaminant in acetylene. The results obtained with the detector tube compared favorably with the usual chemical test.

This type of application is a particular source of potential problems for our industrial hygiene personnel. In these instances, the testing equipment usually is obtained to do a specific job. However, once it is on hand, it may then be used by other people in a manner for which it is not suitable. For example, we have used nickel carbonyl indicator tubes for leak-testing equipment. However, the lower limit of detection of this tube is in the order of 20 ppm, which is well above the level of interest from an industrial hygiene point

of view. A most serious accident or illness could result if a negative response of the tube were to be interpreted as evidence that the air of the environment was satisfactory for personnel to breathe. So far this has not happened, but it is an everpresent possibility. Ethylene oxide detector tubes are suitable for checking leakage from cylinders, but have borderline sensitivity for sampling working environments. On the other hand, hydrogen cyanide detector tubes, which we have used for sampling gaseous products of a reaction, are also suitable for determining potentially hazardous concentrations of hydrogen cyanide in the working environments. It is interesting to note that the presence or absence of hydrogen cyanide in the gases resulting from a reaction has been used to indicate whether or not the reaction was progressing as desired, and to shed some light on the mechanism of the reaction.

The gaseous products resulting from the thermal decomposition of certain materials, primarily plastics, is a subject of increasing interest, as plastics are now being considered for greater use as building materials. Here again, detector tubes have proven useful to establish the presence or absence of phosgene, hydrogen cyanide, or other toxic materials in the products of combustion.

In order to avoid the possible misuse of tests of this type, it is necessary to have a thorough knowledge of the chemical and physical characteristics of the test. For example, it is necessary to know whether or not the test will give accurate results in the concentration range of interest. One mercury detector tube now on the market has been found (by others—we have not used it) to fail in indicating mercury at the Threshold Limit Value. A tube of a different manufacturer is being marketed with convincing evidence that it does reliably detect at the Threshold Limit Value. It is also important to ascertain whether the test is specific for the contaminant in question. If not, what are the potential interferences and how do they affect the test? In some cases, the answers are not readily available, but often the manufacturer's literature is helpful. The effect of shelf life and the conditions under which the reagent is stored are factors that need to be considered. Also, the possible need for periodic calibration and adjustment of the flow rate through the sampling device must be recognized.

Reagent stability varies widely. The type of test which involves mixing two reagents and then using the mixture immediately or refrigerating it to extend the storage life presents many problems. The nuisance and waste associated with this type of test sometimes eliminate it from serious consideration. The industrial hygienist should also know the effect of using the same detector tube or sensitive agent more than once. The effect of using the testing device under unusual or abnormal conditions, such as temperature, humidity, or in the presence of ultraviolet light must be considered.

A question of general interest concerns the possible difference between batches of reagents or tubes purchased at different times. We answered that question in the case of carbon monoxide tubes of the National Bureau of Standards type supplied by one manufacturer. We asked all of our plants using the tubes to contribute samples from different batches and boxes. In this way we

obtained samples of tubes purchased at different times. The results showed that the performance from one batch to another was consistently good. This, of course, may not be true with other types of tubes. Testing of this kind would be prohibitively expensive and time-consuming in most instances.

There are certainly numerous situations where the use of field-type indicator tests are clearly cheaper and more satisfactory than the use of traditional methods of air sampling and analyses. The determination of hydrogen sulfide is a good example of this. Also, there are situations where it is undoubtedly good insurance to have detector kits on hand even though the chance of their needing to be used may be remote. In our experience, kits for boranes in air and for hydrogen fluoride are good examples of such usage. At the same time, there are some situations in which the cost of the device and supplies is prohibitive in comparison with the use of traditional equipment and homemade reagents. The determination of tolylene diisocyanate in air falls in that category, in our experience. The use of a particular kit or indicator-type test might well be excessively expensive and unsuited to one company but ideal for another company. Each industrial hygienist must evaluate his own situation.

It is clear that the manufacturers of detecting devices are making sincere efforts to improve their products when the need is indicated. They can continue this commendable effort by emphasizing two areas.

The greatest need is for the manufacturer to supply or have available as much as possible of the kind of information discussed in the preceding section. There is no doubt but that the volume and quality of such information available today are superior to what was supplied a few years ago.

In addition, the manufacturers should continue to make every effort to assure that the instructions for the proper use of the device are clear and accurate. Especially, the applicable range of concentrations or other pertinent conditions of use should be well defined. At the present time, there is a wide variable of quality of such information being supplied. Particularly commendable are the efforts made by some of the manufacturers to provide their instructions in a durable and weatherproof form suitable for field use.

This discussion has emphasized the existing and potential problems of the industrial hygienist. It is definitely not the intention, nor would it be fair, to view this as a criticism of the manufacturers of the devices. We are well aware from our own experiences of some of the problems which the manufacturers encounter in making and marketing these field indicators.

It should be emphasized that we feel that field-type indicator tests are a very valuable tool when properly applied in the hands of experienced personnel. We welcome the efforts of the manufacturers to continue to provide us with these useful materials.

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A sensitive test which charts the production in human blood of antibodies against malaria is being used with good preliminary results at the National Institutes of Health. The test, described in the March 30, 1962, issue of Science, is a modification of the fluorescent antibody technique. (US DHEW PHS Public Health Reports 77(6):544, June 1962)

Mercury Hazard

V. H. Kindsvatter, PhD, Industrial Hygienist, Philadelphia Naval Shipyard, Philadelphia 12, Pa. Quarterly Industrial Health Report, April - June 1962.

A resurvey was conducted at a test station in reference to a potential mercury hazard. The hazard arises from the use of mercury in manometers which average seven feet in height. Occasionally a manometer blows over or is broken, with the release of large quantities of mercury. The hazard is adequately controlled using the following methods:

1. Scrupulous housekeeping
2. Impervious decking
3. Mercury traps and spill pans under manometer tanks
4. Use of decontaminant HgX to clean up spills

The concentrations in the work areas ranged from 0.01 mgm/cu. meter air to 0.08 mgm/cu. meter. Only one area, the mercury recovery room, showed concentration exceeding the hygienic level of 0.1 mgm/cu. meter. Atmospheric samples in this area showed levels of 0.2 to 0.3 mgm/cu. meter. The following recommendations were made to reduce this level:

1. Resurface shelf below mercury recovery sink
2. Cover mercury catch basket
3. Seal crack in flooring. At the time of the survey, visible droplets of mercury were lodged in the crack.

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Report of an Accident Involving Oxides of Nitrogen

D. J. Bessmer, Industrial Hygienist at Puget Sound Naval Shipyard, Bremerton, Washington, Quarterly Occupational Health Report for April - June 1962.

An employee reported to the Dispensary complaining of cough and shortness of breath and gave a history of exposure to "fumes" in the shaft alley of a ship during a coupling removal operation on the preceding swing shift. His physical examination and symptoms indicated probable chemical pneumonitis due to oxides of nitrogen. Because of the seriousness of this type of exposure, all other employees having an exposure in that location were called in and examined, with the subsequent hospitalization of 6 of the 11 exposed personnel. All of the hospitalized employees complained of dyspnea and cough; x-ray examination revealed varying degrees of mottled infiltrates throughout both lung fields, consistent with an inhalation pneumonia. Significant physical findings consisted of low grade fever, mild injection of the nasal and pharyngeal mucosa, and diffuse inspiratory and expiratory rales throughout both lung fields. Deep inspiration aggravated the cough.

Exposure of these employees was occasioned by the removal of a propeller shaft coupling requiring expansion of a fitting by heating with an oxyacetylene

torch. Because of the high temperatures involved, oxyacetylene flames and electric welding arcs produce oxides of nitrogen by oxidation of the nitrogen of the ambient air. In confined spaces with inadequate ventilation, these oxides of nitrogen can rapidly build up to dangerous concentrations. The threshold limit value (TLV) for continuous exposure is 5 parts per million parts of air. Concentration of 240 parts per million or over can be fatal. Tests have shown that high concentrations can be reached in a matter of minutes. Oxides of nitrogen produce a delayed bodily reaction, reacting with the moisture in the lungs to form nitric acid. The consequent irritation of the lungs causes them to fill with body fluids, causing asphyxiation. In the operation in question, ventilation was stated to be provided by one 5 or 6 inch "sucker" and an air hose blowing into the compartment.

During the course of the examinations it was learned that a similar operation was already getting underway on the evening shift. Arrangements were made for the Industrial Hygienist to make an inspection of the working environment and make measurements of the atmospheric concentration of oxides of nitrogen during the job, but by the time he reached the scene, the operation was just terminating allowing time for only quick grab samples with a Drager gas detector and nitrous gas tubes. About halfway into the shaft alley, the atmospheric concentration was about 15 parts per million, or three times the TLV. In the adjacent machinery space, the concentration of oxides of nitrogen was above 50 parts per million, as was a sample taken on the deck above at the entrance to the ladder leading to the shaft alley. The higher concentrations found outside the shaft alley were due to the fact that air was being supplied to the shaft alley by 2 blowers, and being removed by one, thus causing a positive pressure in the shaft alley and forcing the toxic gases back into the ship. The actual concentration in the breathing zones of the exposed men could not be determined because of the termination of the job. A total of 5 exposed personnel were examined and found to have neither symptoms nor physical evidence of toxic exposure. This is considered mainly due to the fact that the employees were able to stay in the stream of fresh air being blown into the compartment and to the relatively short time (15 to 20 minutes) required for the operation on this occasion.

In order to prevent future occurrences of this kind in all operations involving arc welding or use of oxyacetylene flames in confined spaces, it was recommended that:

a. Ventilation be provided in accordance with the requirements of Chapter 92, Bureau of Ships Manual.

b. The ventilation be arranged to remove the toxic gases or fumes at their source before they can enter the breathing zone of the workers, and be discharged in an appropriate outside area.

c. Where such ventilation can not be provided or properly arranged, air-supplied respirators be worn by each exposed employee.

d. Induction heating be used in place of oxyacetylene heating whenever possible.

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Don't Tamper With the Tulips

Lila Jameson, Editor, "Your Health," Utah State Department of Health, Health Education and Community Relations, Salt Lake City 13, Utah, Vol. 19, No. 5, May 1962.

With the advent of spring and summer and the appearance of a multitude of flowers, there may be danger of curious little children picking and tasting the stems, petals, or leaves of plants and flowers growing in the yard.

As a safety measure the following list was prepared of a few of the more common plants and flowers found in this area which could be dangerous if eaten by a child. Flowers with an asterisk beside them are those which could be fatal if eaten by children in a considerable quantity.

Plants	Poisonous Part
*Elephant ear	Any
*Narcissus	Bulb
*Dumb cane	Any
Spider Lily	Bulb
*Four o' clocks	Root, seed
Columbine	Berry
*Cyclamen	Tuber
*Ivy	Leaves
*Potato	Seeds, sprouts
*Pimpernel	Any
*Oleander	Leaves
*Lily-of-valley	Any
*Burning Bush	Leaves
Sweet pea	Stem

Plants	Poisonous Part
*Jimson weed	Any
*Rhododendron	Any
*Iris	Underground stem
*Pinks	Seed
*Mock orange	Fruit
*Spanish bayonet	Root
*Bittersweet	Berry
*Castor bean	Seed
*Foxglove	Leaves
*Scotch broom	Seed
*Bluebonnets	Seed
*Tulip	Bulb
*Monkshood	Root
*Hemlock	Any

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Study by Army Expert Finds Microbiological Labs Unsafe

The Environmental Research Laboratory, Department of Preventive Medicine, School of Medicine, University of Washington, Seattle, Wash. Occupational Health Newsletter, Vol. 11, No. 5, May 1962.

Few microbiological laboratories which handle infectious microorganisms are adequately designed, equipped, and administered for personnel safety. This is the major conclusion drawn in the recently published results of a year-long study of safety in a cross-section of the world's microbiological laboratories.

The study was conducted by G. Briggs Phillips, Safety Division, U. S. Army Chemical Corps Biological Laboratories, under a Secretary of the Army Research and Study Fellowship. During his year of study, Mr. Phillips visited 111 laboratories in the U. S. and 17 foreign countries, and interviewed over 400 laboratory administrators, scientists, and technicians.

Of 102 laboratories studied in detail, only 4 were considered to be completely adequate and sufficiently proficient in all aspects of microbiological safety. Most important and frequent difficulties encountered were: (1) Failure to integrate safety objectives and policies into the laboratory program (2) Lack of understanding of the mechanisms of aerosol formation during common laboratory procedures (3) Lack of understanding and acceptance of laboratory design principles, preventive techniques, and safety equipment.

Laboratory-acquired infections were a serious problem in the majority of the laboratories studied, tuberculosis and Q fever being the most frequent. However, 29 other diseases, headed by brucellosis, psittacosis, and tularemia, also were involved.

Sixty-nine percent of the laboratories were operated without any kind of active or directed microbiological safety program, and 65% did not even apply basic accident and injury prevention principles generally used in non-laboratory situations. Only 55 laboratories used safety cabinets, and less than 10 of these used cabinets of adequate design.

"Considering the various available approaches for improving safety in handling infectious micro-organisms, critical experimental evaluations should be conducted to determine (1) What improvement in microbiological safety techniques and equipment is desirable to reduce or eliminate human infectious hazards? (2) What changes are unnecessary? (3) What changes in technique or equipment are desirable to protect experimental or diagnostic validity, or the purity of the biological product? (4) Whether changes made in technique or equipment actually are effective," the report recommends.

The report, "Microbiological Safety in U. S. and Foreign Laboratories," will be available to qualified requestors from the Armed Services Technical Information Agency. Non-governmental agencies and individuals will be able to purchase the report from the Library of Congress, Photo-Duplication Services, Publication Board Project, Washington 25, D. C.

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Erratum:

In Vol. 40, No. 2 of the Medical News Letter Mr. Worsham, Industrial Hygienist, U. S. Naval Air Station, Norfolk, Va., was incorrectly named as author of the article "Hobby Shop Health Hazards." Subject article was written by Mr. Oscar Sobol, Industrial Hygienist, U. S. Naval Air Station, Alameda, California.

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A review of court decisions regarding fluoridation of water supplies has been published in the January, 1962 issue of Public Works by Dr. James A. Tobey, a member of the New York bar. (US DHEW PHS Public Health Reports 77(6): 544, June 1962)

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RESERVE SECTION

THE BERRY PLAN

Armed Forces Physicians' Appointment and Residency Consideration Program

NOTE: Because of a number of changes in the Berry Plan, the July 1962 revision of the program description is herewith reproduced at the request of the Reserve Division, BuMed. —Editor.

I. THE PROGRAM

A. The Armed Forces Physicians' Appointment and Residency Consideration Program provides a means by which (a) physicians who are liable for active duty may volunteer for a Reserve commission in one of the military services and may be brought to duty at a mutually acceptable time, and (b) the Army, Navy, and Air Force may obtain from among those volunteers the required number of general duty physicians and specialists. To fill projected requirements of the services for specialists, the Department of Defense will sponsor the deferment of a selected number of reserve officers who will be permitted to complete residency training before being called to active duty. This program was developed with the authorization and cooperation of the Director, Selective Service System.

B. No additional obligated military service is required as a result of participation in this program. Participants must agree to serve on active duty for 2 years - the period for which they are obligated under the Universal Military Training and Service Act.

C. During fiscal year 1964 (1 July 1963 - 30 June 1964) the Department of Defense will have an extensive requirement for personnel to fill positions vacated by medical officers who will be completing 2-year tours of duty and physicians who will be leaving the service for other reasons. The purpose of programs such as this one is to fill the needs of the services by voluntary means. However, if enough volunteers for active duty cannot be obtained, special draft calls will be placed with Selective Service for the deficit, and physicians who wait for a draft call must be prepared to enter military service at the time of the call even though in residency training. Physicians who apply for reserve commissions after having been ordered for induction by the Selective Service will not have a choice of service, or selection of time of entry on active duty.

D. For physicians graduating from medical schools in 1962, who do not wish to subject themselves to the uncertainty of the draft, the Armed Forces,

through this program, offer a reserve commission with entry on active duty at one of the following times:

1. Immediately upon completion of internship (Post-Internship Duty).
2. As late as 1 year following completion of internship (Delayed Duty).
3. Upon completion of residency training in specialties required by the Armed Forces (Deferment for Residency Training).

II. QUALIFICATIONS

A. For commissioning and call to duty, or residency deferment consideration, participants must meet all of the following requirements:

1. Be a 1962 graduate of a medical school which meets the criteria of the Council on Medical Education and Hospitals of the American Medical Association, or possess unrestricted ECFMG certification.
2. Be liable for 2 years of military service.
3. Be willing to apply for, and if qualified, to accept a reserve commission in the Medical Corps of the Army, Navy, or Air Force.

B. Medical fitness standards for reserve commission in the Medical Corps are the same as those applicable for induction as medical registrants. These standards are lower than those applicable to "regular" registrants. Final determination of acceptability is made after application for commission.

III. PROCEDURE

A. Application for Participation in the Program: The applicant must complete and return the attached Statement of Preference (SD Form 249) before 15 September 1962. Forms received after 15 September 1962 will be considered only if there are "vacancies" unfilled by applicants who apply by the deadline date. Each question on the form should be completely and accurately answered. Failure to return the form by 15 September 1962, or to furnish all the required information, may deprive the applicant of being called to active duty at the time he desires or of being selected for deferment for residency training.

B. Determination of Sponsoring Service: Upon receipt at the Department of Defense, the completed Statement of Preference forms are referred to the Army, Navy, or Air Force as "sponsors" for the administrative actions related to commissioning. So far as is possible, the sponsoring service will be that indicated as first choice by the applicant. However, in some instances, where the service requirements are not matched by the applications, it may be necessary to refer an applicant to a service other than that of his first preference.

C. Commissioning: The sponsoring service will forward to the applicant information and instructions on the method of applying for a reserve commission. All participants will be required to complete and return the application

for commission to the appropriate service by 1 December 1962. This is to allow the services sufficient time in which to process the application (which normally takes from 3 to 4 months) and to tender the applicant a commission before he completes his internship. Actual participation in the program begins only with the acceptance, by the applicant, of the commission which is tendered him. The return of the application for commission prior to 1 December 1962 is therefore an important step. If the applicant is already a member of another branch of a reserve component, he must request transfer of his commission to the Medical Corps not later than 1 December 1962. This request must be made to the service in which the commission is held.

D. Call to Active Duty:

1. Post-internship: Participants who indicate in paragraph 3a or 4a of the Statement of Preference that they prefer active duty immediately upon completion of internship will be called to duty as vacancies occur. It is anticipated that the majority will be called in July or August 1963 unless they desire a later date. Applicants should notify the sponsoring service, when applying for a commission, of the time of year they desire to come on duty. In the event that all those requesting a specific time cannot be brought to duty at that time, selection will be made on the basis of the order of receipt of applications for commission. As the postmark date will be used it is important that applications be submitted early.

2. Delayed Active Duty: Participants who indicate in paragraph 3b or 4b of the Statement of Preference that they prefer active duty 1 year after internship will be brought to duty in July 1964. Physicians in this category may take a residency (one year) in any specialty, including general practice, or may use the year to complete the second year of a 2-year rotating internship. (It is unlikely that physicians completing one year of residency will be assigned in their specialty fields, as the services will have in deferment for residency training a sufficient number of residents to meet their anticipated specialty requirements.)

E. Deferment for Residency Training

1. Participants who indicate in paragraph 3c of the Statement of Preference that they desire deferment will be considered for deferment. Selections of those to be deferred will be made the latter part of September 1962. The chances of your being selected will depend upon the number requesting deferment in your specialty and the number of positions available in that specialty. Each specialty will be considered separately, and selections will be by random choice within the specialty.

2. By agreement with the Director of Selective Service, the Armed Forces are permitted to defer the call to duty of commissioned residents only to the extent necessary to meet their projected requirements for specialists. These requirements must, of course, be calculated as accurately as possible some years ahead. The services are not authorized to sponsor deferment for training which is over and above, or not pertinent to, their projected requirements.

3. Selection of interns to receive deferments will be made in the following specialties in the service as indicated below:

SPECIALTY	ARMY	NAVY	AIR FORCE
Allergy	x	x	x
Anesthesiology	x	x	x
Aviation Medicine	x		x
Cardiology			x
Dermatology	x	x	x
Gastroenterology		x	x
General Practice		x	x
Internal Medicine	x	x	x
Neurology	x	x	x
Obstetrics and Gynecology	x	x	x
Occupational Medicine		x	x
Ophthalmology	x	x	x
Orthopedic Surgery	x	x	x
Otolaryngology	x	x	x
Pathology	x	x	x
Pediatrics	x	x	x
Physical Medicine and Rehabilitation		x	x
Preventive Medicine and Public Health	x	x	x
Psychiatry	x	x	x
Psychiatry (Child)			x
Pulmonary Disease		x	x
Radiology	x	x	x
Research*	x	x	x
Surgery, General	x	x	x
Surgery, Neurological	x	x	x
Surgery, Plastic		x	x
Surgery, Thoracic			x
Urology		x	x

* Applicants in research fields should include with their Statement of Preference a summary of the research program they plan to pursue, and the approximate date the program will be completed. They will be expected to engage in formal research programs either in fellowship or residency. Total deferment normally will not exceed 4 years, and must be renewed annually.

4. In completing paragraph 3c of the Statement of Preference, the applicant should state specifically the type of residency training he plans to undertake; e.g., internal medicine, general surgery, obstetrics and gynecology, etc. For specialties requiring 1 year or more of training in general surgery or internal medicine, the specialty in which the training will eventually be received should be listed. For example, if residency training in orthopedic surgery is desired, the entry should be "orthopedic surgery" not "general surgery." Only one specialty should be entered. If more than one specialty is listed, the applicant will not be considered for deferment.

5. Participants who are selected for deferment to complete residency training will be notified during the first week of October. They will be furnished SD Form 247, and will be required to accomplish the following before 1 March 1963.

a. Obtain a residency, fellowship, or postgraduate training which meets the criteria of the Council on Medical Education and Hospitals of the American Medical Association and the requirements of the appropriate specialty board.

b. Complete and sign Part I of SD Form 247 (Request for Residency Training).

c. Have Part II (Hospital Agreement) of SD Form 247 completed and signed by an official of the hospital in which they will take their residency training. (If selected for training in a specialty which requires 1 year of general surgery, internal medicine, or basic science, the applicant may submit an SD Form 247 for the prerequisite training, with the understanding that he will be expected to submit Hospital Agreements for the second and subsequent years of training in the specialty for which selected in the program.)

d. Mail the completed form to: Assistant Secretary of Defense (Manpower), ATTN: DASD (Health & Medical), The Pentagon, Washington 25, D. C., before 1 March 1963. If an extension of this deadline is needed, this office should be notified before the deadline date.

(To be continued)

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